REMARKS

The Official Action dated October 4, 2004 has been carefully considered. Accordingly, it is believed that the following remarks demonstrate the patentability of claims 29-50 and place the present application in condition for allowance. Reconsideration is respectfully requested.

In the Official Action, claims 29-50 were rejected under 35 U.S.C. §102(e) as being anticipated by the Szum U.S. Patent No. 6,240,230 B1. The Examiner asserted that Szum teaches a radiation cured material comprising about 20 wt. % to about 80 wt. % of a polyether based urethane acrylate oligomer, about 20 wt. % to about 80 wt. % of a monomer diluent, and an effective amount of a photoinitiator and that Szum's cured material can have an elongation at break and modulus within Applicants' claimed range. The Examiner referred to Szum Examples 1 and 3 and asserted that the composition taught by Szum is substantially the same as that claimed by Applicants, whereby the Examiner has reason to believe that the properties such as tear resistance, adhesion force, modulus and elongation at break are the same or similar to those contemplated by Applicants, citing *In re Spada*, 911 F.2d 705, 709, 15 U.S.P.Q. 2d 1655, 1658 (Fed. Cir. 1990).

However, as will be set forth in detail below, Applicants submit that the radiation cured material defined by claims 29-50 is not anticipated by and is patentably distinguishable from the teachings of Szum. Accordingly, this rejection is traversed and reconsideration is respectfully requested.

More particularly, claim 29 recites a radiation cured material having a tear resistance of less than about 2.20 pounds force and an adhesion force to an underlying surface material of greater than about 0.0044 pounds force. Claims 30-50 further define these properties, additional properties and/or components of a composition from which the radiation cured

material is formed by radiation curing. As set forth in the present specification, for example in the paragraph bridging pages 4 and 5, the radiation cured material according to the present invention is particularly suitable for use as an encapsulating material for optical fiber ribbons as the radiation cured material has a low tear resistance which allows subunit ribbons to be separated by hand and has robust handling properties which resist delamination and cracking when subjected to twisting. In further embodiments, the radiation cured material has a percent elongation at break of at least about 5%, and/or a modulus at 25°C of at least about 1000 psi.

Szum discloses protective materials for optical fibers which do not substantially discolor, i.e., which, after cure, are substantially non-yellowing. The formulations do not include material amounts of ingredients which tend to cause yellowing or, in theory, extended conjugation in the cured compositions (abstract). Szum broadly discloses radiation curable compositions comprising about 20 wt. % to about 80 wt. % of at least one urethane acrylate oligomer, about 20 wt. % to about 80 wt. % of at least one monomer diluent, and an effective amount of at least one photoinitiator. In a preferred embodiment, at least one oligomer, at least one diluent, or both comprise at least one isocyanurate group which functions to raise the glass transition temperature (Tg), without contributing to substantial yellowing in the coating (column 8, lines 9-20). However, Szum specifically discloses that mechanical properties of the compositions and materials are effected by the selection of oligomer and by selection of reactive or monomer diluent (column 7, lines 1-3).

Applicants find no teaching or suggestion by Szum relating to a radiation cured material having a tear resistance of less than about 2.20 pounds force. Further, Applicants find no teaching or suggestion by Szum relating to a radiation cured material having an adhesion force to an underlying surface material of greater than about 0.0044 pounds force.

While the Examiner asserts that Szum discloses compositions which are substantially the same as that claimed by Applicants, thereby allowing the Examiner to assume that the Szum compositions exhibit the presently claimed properties, Applicants submit that the Examiner's assertion of substantially the same composition is in error, whereby the assumption regarding the claimed properties of tear resistance and adhesion force to an underlying surface material is in error.

In this regard, attention is first directed to Examples 1 and 3 of Szum, on which the Examiner has relied. Example 1 contained 47% urethane acrylate oligomer, 6% hexanediol diacrylate, 12% isobornyl acrylate, 31.5% trishydroxyethyl isocyanurate triacrylate and 1.5% photoinitiator. Example 3 contained 50 wt. % polypropylene glycol oligomer, 5% hexanediol diacrylate, 10% isobornyl acrylate, 31.5% trishydroxyethyl isocyanurate triacrylate and 1 % photoinitiator. In contrast, the exemplary compositions of the present invention exhibiting tear resistance and adhesion force within the ranges recited in claim 29 contained about 75% silicone modified polyether aliphatic urethane diacrylate, about 4.5% photoinitiator and about 20.4% triacrylate trishydroxyethyl isocyanurate (Example 1) and about 61.5% silicone-modified polyether aliphatic urethane diacrylate, 28 wt. % trifunctional polyether acrylate, about 4 wt. % photoinitiator and about 5 wt. % caprolactone acrylate (Example 2). One of ordinary skill in the art will easily recognize that the composition of Szum's Examples 1 and 2 are not identical to the compositions of Examples 1 and 2 set forth in the present specification. Accordingly, there is no basis for assuming that the exemplary compositions of Szum have the same properties, particularly tear resistance and adhesion force, as the compositions described in Examples 1 and 2 in the current specification. Even Szum specifically teaches that selection of oligomer, reactive monomer and monomer diluent effects the mechanical properties of the compositions. Accordingly, Szum does not disclose

compositions or materials which are identical to those of the present application and therefore does not anticipate the radiation cured material defined by claim 29.

While there may be overlap between the broad composition disclosed by Szum and the composition limitations recited in one or more of the present dependent claims, for example claim 33 reciting a composition comprising from about 30 to 80 wt. % of a polyether-based urethane acrylate oligomer, from about 1 to about 40 wt. % of isocyanurate monomer having a plurality of acrylate or methacrylate groups, and an effective amount of a photoinitiator, this claim, including claim 33, are not directed to any composition having the recited components in the recited amounts. Rather, claim 33, and the additional dependent claims, depend from claim 29, and therefore each of these claims first and foremost require the tear resistance and adhesion force recited in claim 29. Szum provides no teaching or suggestion in this regard.

In re Spada, supra., is relied upon by the Examiner for the proposition that products of identical chemical composition cannot have mutually exclusive properties. As Szum does not disclose exemplary compositions which are identical to the exemplary compositions set forth in the present application, Szum does not disclose an identical chemical composition and therefore does not provide any basis other than that the exemplary compositions of Szum as the properties required by claim 29.

That the compositions of Szum do not inherently exhibit the properties required by the present claims, is evident from the exemplary teachings of Szum. For example, at column 16, lines 6-8 and column 18, lines 47-49, Szum discloses that the compositions of Examples 1 and 3 have a modulus of 973 MPa and 740 MPa, respectively. These values correspond with a modulus of approximately 140,000 psi and 107,000 psi, respectively (1 MPa equals 145 psi as indicated in the attached pressure conversion table available at

http://www.hpp.vt.edu/Pressureconvert.html. The values disclosed by Szum are therefore significantly greater than the upper limit of modulus recited in, for example, claims 31, 32, 42, 43 and 48, thereby clearly demonstrating the differences in the presently claimed radiation cured material and that of Szum.

Anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference, *In re Robertson*, 49 U.S.P.Q. 2d 1949, 1950 (Fed. Cir. 1999). Moreover, a prior art disclosure of a generic formula encompassing a vast number of compounds or compositions, including an applicant's claimed compound or composition, does not by itself describe applicants' claimed invention within the meaning of 35 U.S.C. §102; rather, such a prior art reference must further provide a specific, limited teaching relating to the claimed compound or compositions in order to be the same, *In re Petering*, 33 U.S.P.Q. 275 (CCPA 1962); *In re Ruschid*, 145 U.S.P.Q. 274 (CCPA 1965); *In re Arkley*, 172 U.S.P.Q. 524 (CCPA 1972). The specific teachings of Szum simply fail to describe, expressly or inherently, each and every element found in claim 29, and the claims dependent thereon. Thus, Szum does not anticipate the presently claimed radiation cured material under 35 U.S.C. §102. Accordingly, the rejection of claims 29-50 under 35 U.S.C. §102 has been overcome. Reconsideration is respectfully requested.

It is believed that the above represents a complete response to the rejection under 35 U.S.C. §102, and places the present application in condition for allowance. Reconsideration and an early allowance are requested.

Respectfully submitted,

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Pressure Conversion Table

MPa	Psi	MPa	Psi
1	145	650	94,275
50	7,252	700	101,526
*100	14,504	750	108,778
150	21,756	800	116,030
200	29,008	850	123,282
250	36,259	900	130,534
300	43,511	950	137,786
350	50,763	1000	145,038
400	58,015		
450	65,267		
500	72,519		
550	79,771		
**600	87,023		

Psi	MPa	Psi	MPa
*14,500	100	80,000	552
20,000	138	85,000	586
25,000	172	**87,000	600
30,000	207	90,000	621
35,000	241	95,000	655
40,000	276	100,000	689
45,000	310	110,000	758
50,000	345	120,000	827
55,000	379	130,000	896
60,000	414	140,000	965
65,000	448	150,000	1034
70,000	483		
75,000	517		

*Minimum pressure for equipment at Virginia Tech's High Pressure Processing Laboratory.

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